

Practice Test 4

PreAlgebra
Full roll

Solve the following:

① $12x + 15 - 11x = -25$

$$1x + 15 = -25$$

$$x + \cancel{15} - \cancel{15} = -25 - \cancel{15}$$

$$\boxed{x = -40}$$

Check:

$12x + 15 - 11x$	-25
$12(-40) + 15 - 11(-40)$	-25
$-480 + 15 + 440$	-25
$-40 + 15$	-25
-25	$-25 \quad \checkmark$

① Distribute
② Combine
③ Isolate
④ Combine
⑤ Divide/Multiply
D C I C D

$\begin{array}{r} 12 \\ 40 \\ \hline 480 \end{array}$	$\begin{array}{r} 11 \\ 40 \\ \hline 440 \end{array}$
-------------------------------------------------------	-------------------------------------------------------

② $-2 + y + 5 = 3y + 9$

$$3 + y = 3y + 9$$

$$3 + \cancel{y} - \cancel{y} = 3y + 9 - y$$

$$3 = 2y + 9$$

$$\underline{3 - 9} = 2y + \cancel{9} - \cancel{9}$$

$$\frac{-6}{2} = \frac{2y}{2}$$

$$-3 = y \rightarrow \boxed{y = -3}$$

D C I C D

Checking:

$-2 + y + 5$	$3y + 9$
$-2 - 3 + 5$	$3(-3) + 9$
$-5 + 5$	$-9 + 9$
0	$0 \quad \checkmark$

$$\textcircled{3} \quad \underline{13y} + 9 - \underline{2y} = 6y - 8$$

$$11y + 9 = 6y - 8$$

$$\underline{11y} - \underline{6y} + 9 = -8 + \cancel{6y} - \cancel{6y}$$

$$5y + 9 = -8$$

$$5y + \cancel{9} - \cancel{9} = -8 - 9$$

$$\frac{5y}{5} = \frac{-17}{5}$$

$$y = -\frac{17}{5} = \boxed{-3\frac{2}{5}}$$

Check!

$$\textcircled{4} \quad 5x - (\underline{8x + 3}) = 2$$

$$\textcircled{D} \underline{\underline{C}} \underline{\underline{I}} \underline{\underline{C}} \underline{\underline{D}}$$

$$\underline{5x} - \underline{8x} - 3 = 2$$

$$\underline{-3x} - 3 = 2$$

$$-3x - \cancel{3} + \cancel{3} = 2 + 3$$

$$\frac{-\cancel{3}x}{-\cancel{3}} = \frac{5}{-3}$$

$$x = -\frac{5}{3} = \boxed{-1\frac{2}{3}}$$

Check!

Most common mistake

$$\frac{-3 \cdot x}{\cancel{+3}} = \frac{5}{\cancel{+3}}$$

$$\textcircled{5} \quad -2(5y - 1) + 4y = -4$$

$$\underline{-10y} + 2 + \underline{4y} = -4$$

$$-6y + 2 = -4$$

$$\underline{-6y + 2 = -4}$$

$$-6y + \cancel{2} - \cancel{2} = -4 - 2$$

$$\frac{-6y}{-6} = \frac{-6}{-6}$$

$$\boxed{y = 1}$$

Check!

$$\textcircled{6} \quad 4(x-2) = -2(x+6) + 31$$

D C I C D

$$\cancel{4}x - 8 = -2x - \underline{12} + \underline{31}$$

$$4x - 8 = -2x + 19$$

$$\underline{4x} - 8 + \underline{2x} = -\cancel{2x} + 19 + \cancel{2x}$$

$$\underline{6x} - 8 = 19$$

$$6x - \cancel{8} + \cancel{8} = 19 + 8$$

$$\frac{6x}{6} = \frac{27}{6}$$

$$x = \frac{27}{6} = \frac{\cancel{3} \cdot 9}{\cancel{3} \cdot 2} = \frac{9}{2} = \boxed{4 \frac{1}{2}}$$

$$\begin{array}{r} 1 \\ 19 \\ \underline{12} \\ 31 \checkmark \end{array}$$

$$\textcircled{7} \quad (9y^2 + 8y - 2) - (9y^2 + \underline{5}) = 9$$

D C I C D

$$\cancel{9y^2} + 8y - \underline{2} - \cancel{9y^2} - \underline{5} = 9$$

$$8y - 7 = 9$$

$$8y - \cancel{7} + \cancel{7} = 9 + 7$$

$$\frac{8y}{8} = \frac{16}{8} = \frac{\cancel{2} \cdot 8}{\cancel{2}}$$

$$\Rightarrow \boxed{y = 2}$$

Check!

$$\textcircled{8} \left(-\frac{8}{5}\right) \left(-\frac{5}{8}\right) x = 15 \left(-\frac{8}{5}\right)$$

$$x = - \frac{15 \cdot 8}{5}$$

$$x = - \frac{\cancel{8} \cdot 3 \cdot 8}{\cancel{5}}$$

$$\boxed{x = -24}$$

Check!

$$\textcircled{1} \frac{ax}{a} = \frac{b}{a} \quad \textcircled{2} a \cdot \frac{x}{a} = b, a$$

$$x = \frac{b}{a} \quad x = ab$$

$$\textcircled{3} \frac{b}{a} \frac{a}{b} x = c, \frac{b}{a}$$

$$x = \frac{bc}{a}$$

$\textcircled{9}$

$$\frac{3x}{1} + \frac{2}{5} = \frac{1}{2}$$

$$\text{LCM: } 1, 2, 5 = 10$$

$$30x(10) + \frac{2}{5}(\frac{2}{\cancel{5}}) = \frac{1}{2}(\frac{5}{\cancel{2}})$$

$$30x + 2 \cdot 2 = 1 \cdot 5$$

$$30x + 4 = 5$$

$$30x + \cancel{4} - \cancel{4} = 5 - 4$$

$$\frac{30x}{30} = \frac{1}{30}$$

$$\boxed{x = \frac{1}{30}}$$

Check!

$\textcircled{10}$

$$\frac{x}{9} = 4 + \underline{6 \div 2}$$

$$\frac{x}{9} = 4 + 3$$

$$9 \cdot \frac{x}{9} = 7 \cdot 9$$

$$\boxed{x = 63}$$

Check!

(11)

$$\frac{x}{7} + \frac{x}{1} = \frac{8}{1}$$

$$\text{LCM} = 7$$

$$\cancel{7} \cdot \frac{x}{\cancel{7}} + 7x = 7 \cdot 8$$

$$x + 7x = 56$$

$$\frac{8x}{8} = \frac{56}{8}$$

$$\boxed{x = 7}$$

Check!

(12)

$$\frac{1}{9} + \frac{x}{6} = \frac{2}{3}$$

$$\begin{array}{l} \text{LCM } 9 = 3 \cdot 3 \\ 6 = 3 \cdot 2 \\ 3 = 3 \end{array}$$

$$\text{LCM} = 3 \cdot 3 \cdot 2 = 18$$

$$\cancel{18} \cdot \frac{1}{\cancel{9}} + \cancel{18} \cdot \frac{x}{\cancel{6}} = \cancel{18} \cdot \frac{2}{\cancel{3}}$$

$$2 \cdot 1 + 3x = 6 \cdot 2$$

$$2 + 3x = 12$$

$$2 - 2 + 3x = 12 - 2$$

$$\frac{3x}{3} = \frac{10}{3}$$

$$x = \frac{10}{3} = \boxed{3 \frac{1}{3}}$$

(13)

$$\frac{x}{2} - 7 = \frac{x}{9}$$

$$\text{LCM} = 18$$

$$\cancel{18} \frac{x}{\cancel{2}} - 7 \cdot \cancel{18} = \frac{x}{\cancel{9}} \cdot \cancel{18}$$

$$9x - 126 = 2x$$

$$\frac{18}{7} = 2 \frac{4}{7}$$

$$\begin{aligned}
 9x - 126 &= 2x \\
 9x - 126 - 2x &= \cancel{2x} - \cancel{2x} \\
 7x - 126 &= 0
 \end{aligned}$$

$$7x - \cancel{126} + \cancel{126} = 0 + 126$$

$$\frac{7x}{7} = \frac{126}{7}$$

$$126 = 2 \cdot 63$$

$$x = \frac{126}{7} = \frac{2 \cdot 9 \cdot \cancel{7}}{\cancel{7}}$$

$$\boxed{x = 18}$$

Check

(14)

$$\frac{x}{3} + \frac{x}{2} = 5$$

$$\text{LCM} = 6$$

$$\cancel{6} \frac{x}{\cancel{3}} + \cancel{6} \frac{x}{\cancel{2}} = 5 \cdot 6$$

$$2x + 3x = 30$$

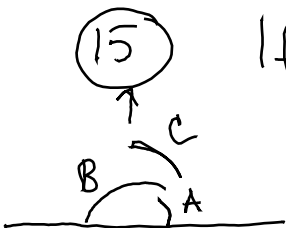
$$\frac{5x}{5} = \frac{30}{5}$$

$$\boxed{x = 6}$$

Most common mistake

$$6 \cdot \frac{x}{3} + 6 \cdot \frac{x}{2} \neq \underline{5}$$

(15)



If $\angle A$ measures 87° find the supplement angle of A

$$A + B = 180^\circ$$

$$A + C = 90^\circ$$

$$C = 90^\circ \checkmark$$

$$S = 180^\circ$$

complement
supplement

$$B = 180^\circ - 87^\circ = \boxed{93^\circ}$$

$$\begin{array}{r}
 180 \\
 - 87 \\
 \hline
 93
 \end{array}
 \qquad
 \begin{array}{r}
 90^\circ \\
 - 28^\circ \\
 \hline
 62
 \end{array}$$

If $\angle B = 28^\circ$ find the complement of B

$$C = 90^\circ - 28^\circ = \boxed{62^\circ}$$

Check by
addition

16 For $\triangle ABC$, $m\angle A = 23^\circ$, $m\angle B = 36^\circ$.

$$m\angle C = ?$$

$$m\angle A + m\angle B + m\angle C = 180^\circ$$

$$23^\circ + 36^\circ + m\angle C = 180^\circ$$

~~Not ICD~~

$$59^\circ + m\angle C = 180^\circ$$

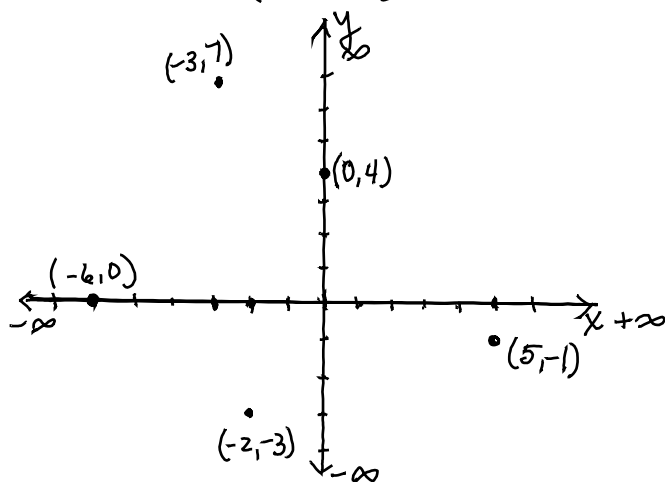
$$\cancel{59^\circ} - \cancel{59^\circ} + m\angle C = 180^\circ - 59^\circ$$

$$m\angle C = 121^\circ$$

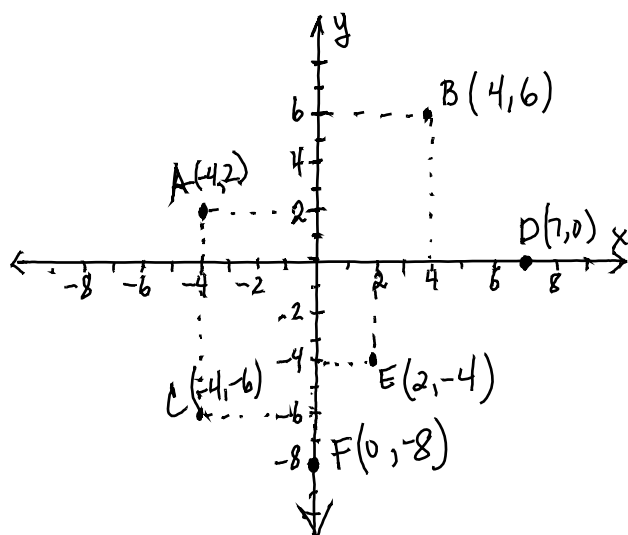
$$\begin{array}{r} 180 \\ - 59 \\ \hline 121 \end{array}$$

The measure of angle C is 121°

17 Plot $(-3, 7)$ $(-2, -3)$ $(0, 4)$ $(5, -1)$ $(-6, 0)$

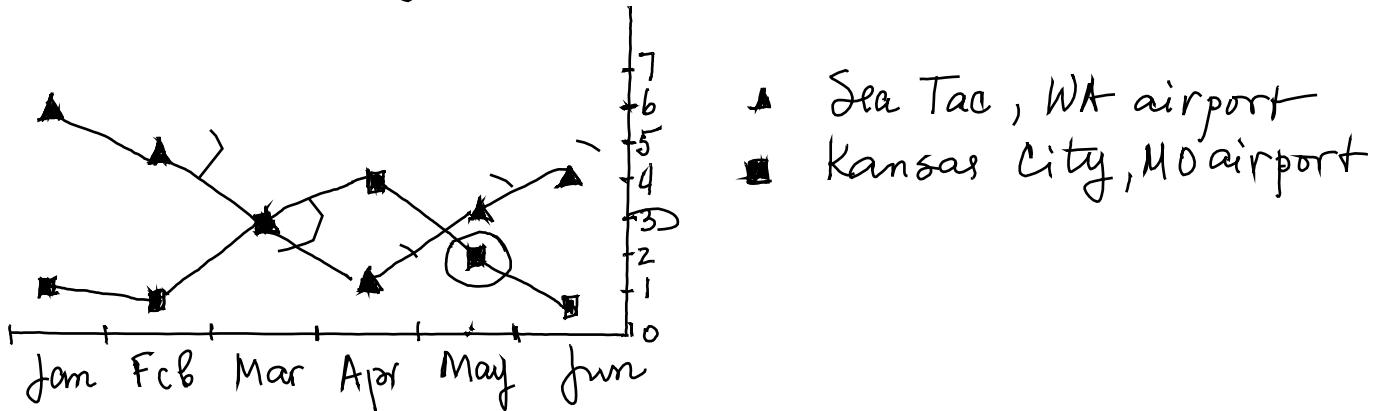


18



	x	y
	↓	↓
A	(-4, 2)	
B	(4, 6)	
C	(-4, -6)	
D	(7, 0)	
E	(2, -4)	
F	(0, -8)	

- 19) The comparison line graph below indicates the average monthly precipitation (in inches) at 2 city airports for the thirty years between 1917 and 2000.



- a) During which month was the average precipitation highest at the Sea Tac airport
Jan - sea Tac airport - was highest
- b) When av. precipitation in Sea Tac was less than the av. precipitation in Kansas City
April - the Sea Tac precip. was less than Kansas City
- c) Average precipitation for May in Kansas City
— || — || — || was 2 inches.
- d) Average precipitation was the same for both cities in March
— || — || — ||

- 20) Find the mean, median, and mode

- a) 11, 22, 21, 74, 32, 25, 29

mean: $\frac{11 + 21 + 25 + 29 + 32 + 32 + 74}{7}$

$= \frac{110 + 50 + 64}{7} = \frac{224}{7} = 32$
mode = 32 median = 29 mean = 32

$$\begin{array}{r} 32 \\ 7 \overline{) 224} \\ \underline{21} \\ 14 \end{array}$$

$$\begin{array}{r} 74 \\ 11 21 32 \\ \underline{25} 29 32 \\ 110 50 64 \\ \hline 100 + 64 \\ 224 \end{array}$$

⑥

~~10~~, ~~18~~, ~~17~~, ~~15~~

~~10~~, 15, 17, ~~18~~

$$\text{mean: } \frac{10 + 17 + 15 + 18}{4}$$

$$= \frac{60}{4} = \boxed{15 \text{ mean}}$$

$$\begin{array}{r} 17 \\ 18 \\ \hline 35 \end{array} \quad \begin{array}{r} 10 \\ 15 \\ \hline 25 \end{array}$$

mode: no mode

$$\text{median: } \frac{15 + 17}{2} = \frac{32}{2} = \boxed{16 \text{ median}}$$

Good Luck!